

REMARKS

The Office Action of November 15, 2007 has been received and carefully reviewed. It is submitted that, by this Amendment, all bases of rejection are traversed and overcome. Upon entry of this Amendment, claims 24-33, 35-41, 49 and 50 remain in the application. Reconsideration of the claims is respectfully requested.

Claims 24-33, 35-38, 49 and 50 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kearn (U.S. Publication No. 2002/0155335) in view of Hata, et al. (U.S. 6,902,790). The Examiner asserts that the combination of Kearn and Hata teach all elements of independent claims 24, 49 and 50.

Although Applicants do not acquiesce to the Examiner's assertion, in order to expedite prosecution, independent claims 24, 49 and 50 have been amended to further define what Applicants regard as the invention. Claims 24, 49 and 50 now recite, in some form, "the metal oxide film including at least one **crack** formed therein" (emphasis added), and "wherein the presence of the at least one crack in the metal oxide film **enhances the surface area** of the metal oxide film for one or more catalytic reactions in the fuel cell" (emphasis added). Support for these new recitation(s) in these claims may be found at page 10, lines 5-16, and in Figs. 7 and 8 of Applicants' specification as filed.

Kearn teaches a solid oxide fuel cell (SOFC) including a thin film electrolyte layer, a thick film anode layer disposed on one side of the electrolyte layer, and a thick film cathode layer disposed on the other side of the electrolyte layer. The SOFC is designed to have a higher performance/higher power density at substantially lower operating temperatures than other SOFC designs. **Nowhere**, however, does Kearn teach or suggest cracks in an electrode for providing increased surface area for one or more catalytic reactions in the fuel cell.

As such, Applicants submit that Kearn fails to teach all elements of amended claims 24, 49 and 50, and Hata fails to supply the deficiencies of Kearn. Hata teaches a planar SOFC including a ceramic sheet that may effectively be applied as a thin, solid electrode or electrolyte film for the SOFC. An object of the Hata reference is "to provide a ceramic sheet as in a constitutive material for use in a planar SOFC and the like which exhibits *less* cracking or breakage even when a large stacking-induced load or thermal stress is applied, and a process for producing the ceramic sheet" (emphasis added). (See column 4, lines 7-11 of Hata). Since Hata teaches that the ceramic sheet is designed and produced to avoid cracks, it is submitted that Hata *teaches away* from enhancing the surface area of the ceramic sheet for one or more catalytic reactions by *forming* one or more cracks in the sheet.

For the reasons stated above, it is submitted that Applicants' invention as defined in independent claims 24, 49 and 50, and in those claims depending ultimately therefrom, is not anticipated, taught or rendered obvious by Kearn and Hata, either alone or in combination, and patentably defines over the art of record.

Claims 39-41 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kearn in view of Hata, and further in view of Ishihara, et al. (U.S. Patent No. 5,175,063). For the reasons stated above, it is submitted that the combination of Kearn and Hata fails to teach all elements of independent claim 24, from which claims 39-41 depend. It is further submitted that Ishihara fails to supply the deficiencies of Kearn and Hata. As such, it is even further submitted that Applicants' invention as defined in claims 39-41 is not anticipated, taught, or rendered obvious by Kearn, Hata, and Ishihara, either alone or in combination, and patentably defines over the art of record.

In summary, claims 24-33, 35-41, 49 and 50 remain in the application. It is submitted that, through this Amendment, Applicants' invention as set forth in these claims is now in a condition suitable for allowance.

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Further and favorable consideration is requested. If the Examiner believes it would expedite prosecution of the above-identified application, the Examiner is cordially invited to contact Applicants' Attorney at the below-listed telephone number.

Respectfully submitted,

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